

SIHI^{LPH-X} - Liquid Ring Vacuum Pump

Two Stage



LPH 45008, LPH 45311, LPH 45316

Pressure Range: 33 to 1013 mbar

Suction Volume: 55 to 258 m³/h

CONSTRUCTION

Sterling SIHI liquid ring vacuum pumps have a simple but robust construction with the following features and benefits:

- Near isothermal compression
- Oil free, with no internal lubrication
- Capable of handling almost all gases and vapours
- Able to handle quantities of liquid "carry over"
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- Broad range of applications
- O-ring sealing as standard
- Cavitation protection as standard
- Drain hole as standard
- Built-in solids drain
- Rotating metallic parts are non contacting to minimise wear
- ATEX compliance

Sterling SIHI liquid ring vacuum pumps of the range LPH 45008, LPH 45311 and LPH 45316 are two stage pumps. In addition, the LPH 45008 and LPH 45316 can be used as compressors without any modification. (see the Technical Catalogue - Liquid Ring Compressors)

APPLICATIONS

Evacuation and pumping of dry gases and saturated vapours. The pumps can also handle liquids. These units offer pressures in the range of 33...900 mbar(a) to atmospheric. Much lower pressures are available by using ancillaries such as ejectors and lobular boosting pumps. Typical application areas include:

- Chemical and pharmaceutical industry for distillation, drying and degassing
- Food and beverage industry for low temperature cooking, and bottle filling
- Electronic industry for impregnation and drying
- Plastics & Rubber industry for degassing
- Healthcare for sterilisers and general vacuum



NOTE

By continuously feeding the pump with a small amount of service liquid (usually water), the heat due to gas/vapour compression is conducted away. This also replenishes the liquid ring and ensures that it does not become saturated with process media. Recharging the pump with service liquid at ambient temperature enables the unit to condense evacuated gases / vapours. It can therefore be used for solvent recovery. The condensed gas and liquid can be separated in a liquid separator. More information is provided in the accessory catalogues.

The integrated solids drain permits the removal of any entrained solids whilst the pump is operating. The service liquid can therefore, simply be re-circulated. The rotation of the pump is clockwise when viewed from the drive end.

GENERAL TECHNICAL DATA

Pump Type	Units	LPH 45008	LPH 45311	LPH 45316
Speed	50 Hz 60 Hz	rpm rpm	1450 1740	
Maximum overpressure on compression	bar		1.5	
Maximum permissible pressure difference	bar	1.5	1.5	1.2
Hydraulic test pressure (Overpressure)	bar		3.0	
Moment of inertia of rotating parts of pump and water content	kg · m ²	0.05	0.063	0.09
Noise level at 80 mbar suction pressure	dB (A)		65	
Minimum permissible pulley diameter for V belt drive	mm		160	
Max. gas temperature:	dry saturated	°C °C	120 100	
Service liquid:				
Maximum permissible temperature	°C		100	
Maximum viscosity	mm ² /s		90	
Maximum density	kg/m ³		1200	
Liquid capacity up to middle of shaft	litre	4.0	5.5	7.0
Maximum flow resistance of the heat exchanger	bar		0.2	

In selecting a pump, avoid choosing one which is likely to be operating at a combination of its maximum permissible limits e.g. maximum viscosity and maximum permissible pressure difference.

Materials LPH 45008, LPH 45311, LPH 45316 with single, double mechanical seal and gland packing

Position Number	COMPONENT	MATERIALS				
		0A	0B	0K	SZ	4B
10.60	Casing	0.6025				1.4408
10.90	Central Body					
13.70, 13.71	Guide Disc	0.6025			1.4404	
23.50, 23.51	Impeller	2.1096.01	1.0619	1.4308	1.4517	
21.00	Shaft	1.4021				1.4404
43.30, 43.31	Mechanical Seal, Type SIHI FK (AG●)	Cr-Steel / Carbon / Butadiene rubber				Cr Ni Mo-Steel / Carbon / Viton
43.30, 43.31	Mechanical Seal, Type Sterling GNZ (AF●)	SiC / Carbon / Viton				SiC / Carbon / Teflon
43.30, 43.31	Double Mechanical Seal	on request				
46.10	Gland Packing	GORE	-			

Cut-away diagram LPH 45008, LPH 45311, LPH 45316 with single, double mechanical seal and gland packing

